

# Growing WILD

Fall 1999

Utah's Project WILD Newsletter



## *Eagles, Hawks and Falcons: Diurnal Raptors of Utah*

above the morning mist of a mountain lake, then you've already gained a sense of the unique combination of efficient design and beauty that sets eagles, hawks and falcons apart from other creatures of the sky.

The term "raptor" comes from a Latin word meaning "to plunder or to seize." It generally refers to all birds of prey, including the diurnal (active during the day) raptors, eagles, hawks and falcons, which scientifically are members of the order Falconiformes. This order is often subdivided into two major groups, the hawks, eagles and osprey, and the falcons. Raptors overall have large, hooked beaks for tearing flesh, strong feet with sharp talons for grasping and killing, and excellent binocular vision five to eight times better than that of humans, all adaptations for a predatory way of life.

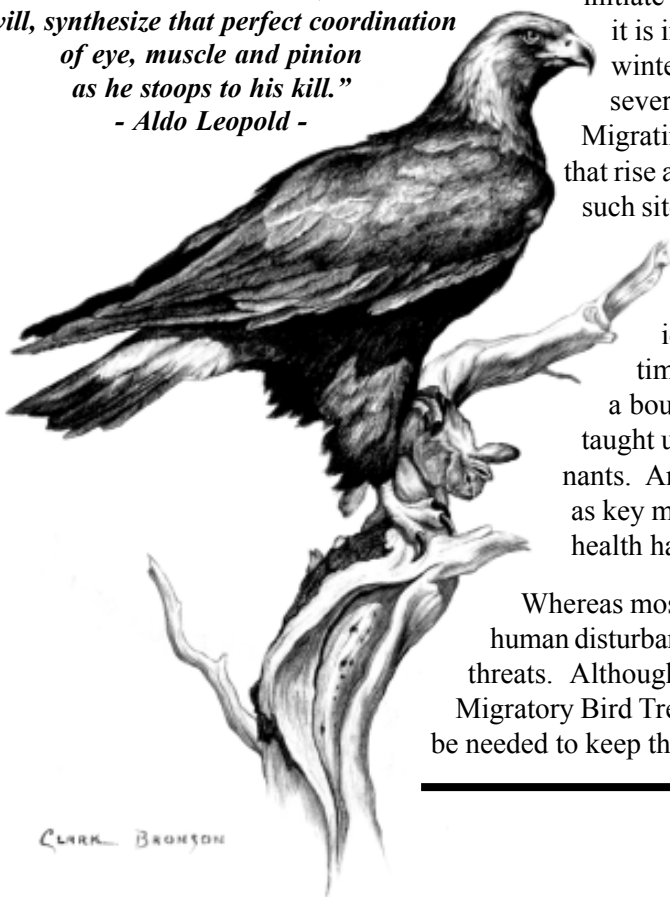
Raptors comprise an interesting and varied group of birds, differing as much behaviorally, as they do in appearance. Many raptors mate for life and return to the same nesting territory for many years. Depending on the species, they build their nest or "aerie" high above the ground on sturdy limbs, on rocky cliff ledges and sometimes on or near the ground, but generally in a secluded area that provides safety and solitude. Nests are loosely built of sticks and twigs, and sometimes lined with feathers and down. The female begins incubation before the last egg is laid, resulting in young of differing ages in the same brood. If food is scarce, not all will survive.

*"The hawk, as a lethal agent, is the perfect flower of that still utterly mysterious alchemy -- evolution. No man-made machine can, or ever will, synthesize that perfect coordination of eye, muscle and pinion as he stoops to his kill."*  
- Aldo Leopold -

Some raptors are permanent residents, living in the same territory all their lives, although most exhibit some form of migratory behavior. Of those that do migrate, some initiate migration behavior primarily because of food shortages, and in others it is instinctual. Distances of migration vary between species with some wintering as far south as Peru. During migration, a raptor can cover several hundred miles a day, depending on weather and wind conditions. Migrating raptors often follow mountain ranges, climbing high on updrafts that rise along ridges and gliding on thermals. During the spring and fall, many such sites in Utah provide great opportunities for viewing migrating raptors.

Humans and raptors have had a long and sometimes contradictory relationship throughout history. At times raptors were revered and idolized as symbols of nobility, sacred power and freedom. At other times they were viewed as competitors, thieves and varmints for which a bounty was paid. Later during the era of widespread use of DDT, they taught us serious lessons about the detriments of environmental contaminants. And today, growing respect and appreciation of their ecological value as key members of natural communities and barometers of environmental health have spurred conservation of these birds around the world.

Whereas most raptor populations in the west are faring relatively well, habitat loss, human disturbance, illegal killing and environmental contamination continue to pose threats. Although all raptors are protected by state and federal laws such as the Migratory Bird Treaty Act, continued diligence and educational efforts on our part will be needed to keep these true symbols of the wild alive and well!



CLARK BRONSON

**Read on to learn more about Utah's  
Eagles, Hawks and Falcons!**

# Raptors Rule!

## Bald Eagle - *Haliaeetus leucocephalus*

Almost everyone knows what an adult bald eagle looks like. We see its majestic image on our nation's official seal, on one dollar bills and on postal trucks. That's because on June 20, 1782, the bald eagle was adopted by the Continental Congress as the central figure for the Great Seal of the United States, representing "free spirit, high soaring and courage." Its power and mystery were recognized well before then by early inhabitants of this continent, who drew its impressive likeness on silent canyon walls, carved its dignified figure into pottery and coveted its grand feathers for ceremonial purposes.

Although there are over 60 species of eagles worldwide, bald eagles are the only eagles found exclusively in North America, ranging from the Gulf of Mexico to near the Arctic. They belong to a group of eagles known as "sea eagles," a fact directly reflected in the scientific name, *Haliaeetus leucocephalus*, the Greek wording for "sea eagle with white head." Not exclusive to coastal areas, they usually occupy many areas associated with water such as lakes, rivers and reservoirs where they feed predominantly on fish, as well as ducks, coots, small mammals and carrion.

The bald eagle isn't really bald as its common named suggests. The term "bald" comes from an old English word for white which was spelled "balde," and refers to the pure white feathers covering its head. This gleaming white head and its white tail, in contrast with its very large, dark body make the bald eagle unmistakably recognized — at least as an adult. In their first four to five years of life, immature bald eagles have dark feathered heads and bodies, making them easily confused with golden eagles. They can be distinguished mainly by white mottling patterns on the undersides of their wing and tail feathers.

Utah hosts one of the largest state populations of wintering bald eagles with more than 1,200 counted statewide in recent years. This represents about 25 to 30 percent of the bald eagles wintering in the western half of the lower 48 states and indicates the significance of Utah's winter habitat for bald eagles. Arriving in early November they often congregate in large numbers at feeding and roosting sites where they perch atop dead cottonwoods along rivers or coniferous trees at higher elevations.

Although abundant in Utah during the winter, bald eagles are rare as breeders. Only four active nests currently exist within the state. Three are in southeastern Utah and a fourth, located on the south end of the Great Salt Lake, was newly established in 1996. Records indicated that bald eagles had not nested within this part of the state since 1918. Bald eagles mate for life, and the pair occupying this nest has been relatively prolific. Between 1996 and 1998, two eaglets were successfully produced each year, and in 1999, three were produced. Only time will tell if one or two of these young will choose to nest in Utah as well.

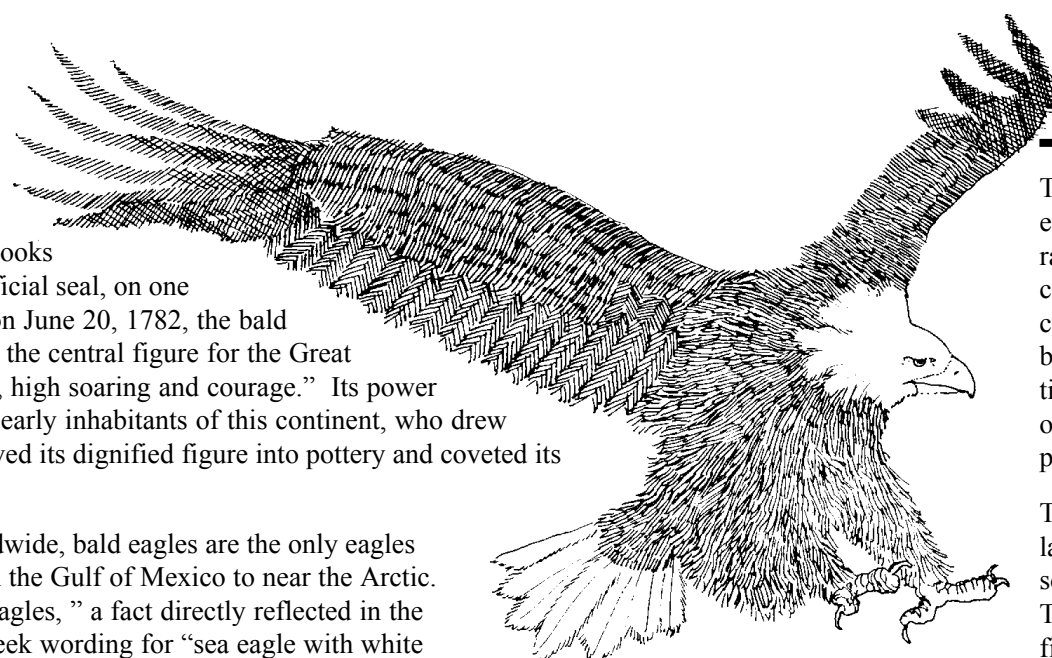
## Golden Eagle - *Aquila chrysaetos*

Weighing up to 13 pounds and with a wingspan of 7 feet or more, the golden eagle is one of the world's largest birds of prey. Soaring across stretches of not only North America, but Central America, Europe, Africa and Asia, it is the more recognized eagle species globally compared to its popular cousin in America, the bald eagle.

In ancient times, the Greeks and Vikings saw the golden eagle as a consort and messenger of the gods, and to the Romans it was the mark of the empero. Long named the "King of Birds," medieval European cultures for centuries viewed it as a symbol of power and majesty, adorning heraldic crests and coats of arms with its strong and assertive image. When falconry flourished, the golden eagle was flown only by kings.



Golden Eagle



Bald Eagle

The golden eagle was an important bird to Native Americans as well. Prized as tokens of strength, valor and power, eagle feathers were treasured for use in ceremonies. Some western tribes even took eaglets from their nests and raised the birds in their camps to collect feathers when they molted. Settlement of the west however brought controversy and persecution to the golden eagle. Viewed as a rival responsible for depredations on lambs and calves, golden eagles became targets of bullets, traps and poison. As recently as 1948 some states still paid a bounty for golden eagles, and until outlawed in 1962, aerial gunning was common in parts of the west. Its reputation as killer persists despite many studies showing that golden eagles usually only eat livestock already dead from other causes. Normally they feed on a broad range of birds, reptiles and mammals, though jackrabbits are their primary prey.

The only other bird with which a golden eagle could be confused is the turkey vulture, *Cathartes aura*, another large, dark feathered soaring bird which occupies similar habitat. The turkey vulture, in contrast to the golden eagle, soars with wings held up at an angle forming a shallow "V" or dihedral whereas, bald eagles soar on flat wings. The smaller, featherless head of the turkey vulture is also red in color. Turkey vultures are often included in raptor field guides, but technically are not raptors since they are scavengers and do not possess strong feet and sharp talons for grasping prey. Turkey vultures are actually more closely related to storks than to raptors.

Today, the golden eagle is the most numerous eagle in North America, living primarily in the west where the population is estimated to exceed 60,000 birds. It is an eagle of rugged cliffs, canyons and the adjacent open country which provides consistent breezes and thermals for soaring. The shiny golden washed feathers of its head and nape give it its name. The rest of the feathers of its body are a rich dark brown except for a trace of white feathering at the base of the tail. It belongs to a group of eagles known as "booted" eagles because it has feathers extending down the entire length of its legs to the toes. Next time you're out in open county, look skyward for these masterful hunters soaring above.

## Red-tailed Hawk - *Buteo jamaicensis*

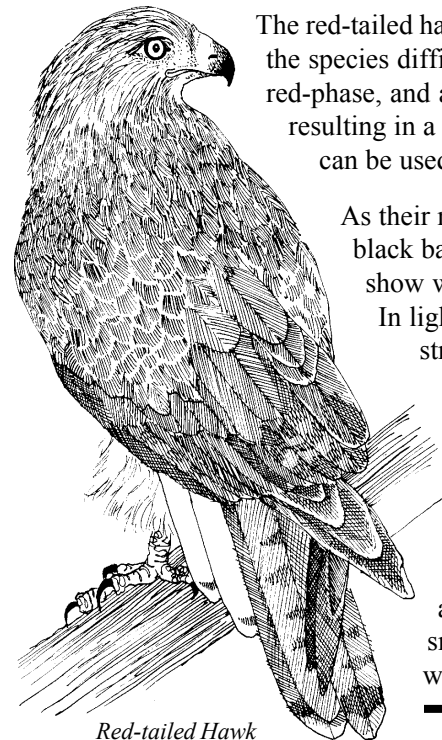
The red-tailed hawk is probably the most common, most widely distributed and best known of all hawks in North America. It is a large, stocky hawk of woodlots, fields, alpine meadows, prairies and roadsides all across the nation — the classic buteo. In Utah it is the only year-round resident broad-winged hawk. Because of this and its abundance it is probably the most likely hawk that you will see at any time of the year. It is also the hawk you are most likely to hear. Its call, the familiar high-pitched, downward-slurred *kree-e-e-e-e* scream reminiscent of a squealing pig, is the hawk call heard in practically every Hollywood western that's been made.

The red-tailed hawk is highly variable in its coloration, however, sometimes making positive identification of the species difficult. In western North America there are three different color phases — a light phase, a red-phase, and a melanistic, or dark phase. Interbreeding between color phases complicates things by resulting in a broad range of intermediates. Red-tails do have a few specific distinguishing features that can be used to aid in their identification as they soar overhead.

As their name implies, red-tailed hawks have a reddish cinnamon or rufous colored tail with a thin black band near the edge, but only as adults. Immature birds have finely barred brown tails that show white at the base. In addition, the tails of the immatures are longer than those of the adults.

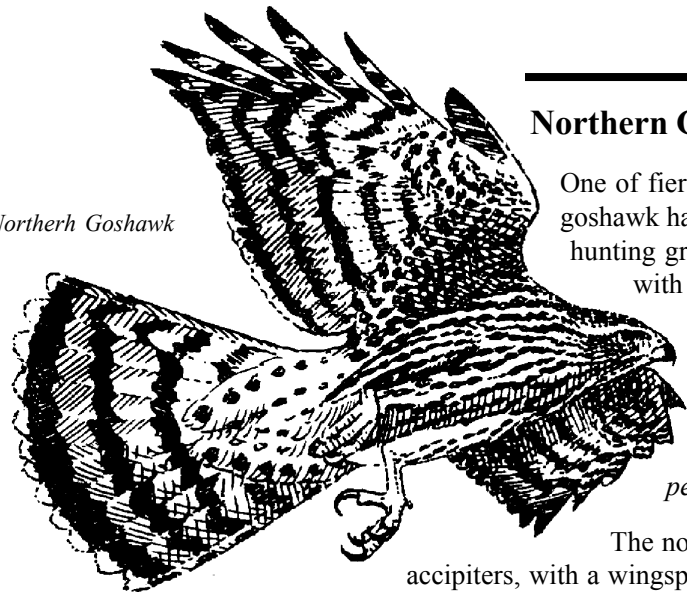
In lighter and reddish phases, a distinct dark band running across the belly of the red-tail is a strong indicator of the species. Also, two features on the undersides of the wings, a set of bold "commas" located on the wrist or carpal area of each wing and a thick, dark line running along the leading edge of the arm (patagium), aid significantly in identification.

Red-tailed hawks are highly versatile and adaptable birds. They have been able to acclimate well to a world changed by people. For example, agricultural practices which cleared unuseable dense forests created open fields for foraging and telephone poles stretching across the landscape provided excellent perches for hunting. As hunters, they are consummate opportunists, feeding on any furred, feathered, or scaled creature that is smaller than a groundhog, although rodents are the mainstay of their diet. Perhaps if you watch for a while you'll see one stooping for a meal.



Red-tailed Hawk

Northerh Goshawk



## Northern Goshawk - *Accipiter gentilis*

One of fiercest, most aggressive and persistent pursuers of prey, the goshawk has earned itself a reputation of being an especially adept killer, hunting grouse, squirrels, showshoe hares, songbirds and smaller hawks with unwavering precision. It is very well adapted to hunting in wooded areas where its short-rounded wings and long tail allow it to maneuver with extreme skill and agility, and engage in amazing high speed, twisting and turning aerial pursuits of its quarry. “Accipiter,” its genus, and the Latin word for “bird of prey,” is derived from the Greek word *aci* for “swift” and *petrum* for “wing,” a name quite befitting of this hawk.

The northern goshawk is the largest of the three North American accipiters, with a wingspan of about four feet. Most notable of the goshawk are its prominent white eyebrows that contrast boldly with the steel, blue-gray feathers of its head, back and tail, and crown its assertive red eyes. The feathers of its undersides are a marbled grayish-white with distinct dark, vertical bars. The female is noticeably larger than the male.

As its common name implies, the northern goshawk is a bird of northern forests. It inhabits a variety of forest types continent-wide, but prefers dense coniferous forests for nesting. In Utah they are found mainly in montane habitats, but sometimes move to canyon bottoms to follow a prey source. Female goshawks are extremely protective of their nests and numerous accounts of attacks have been made. Usually a loud insistent *cak-cak-cak* warning call is uttered repeatedly by the female before streaking out of the sky like feathered lightning. Researchers have compared the force of an attack to the blow of a swiftly thrown softball.

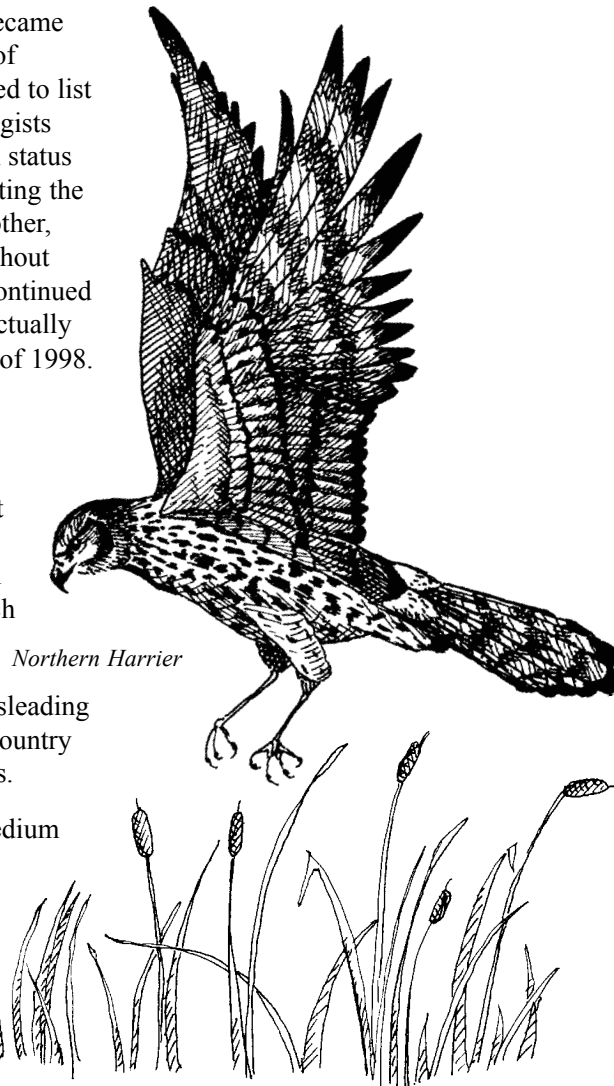
Being a hawk of mature forests, in the early 1990s, several conservation groups became concerned that logging of old growth forests in the west was placing populations of goshawks at risk. In July of 1991, the U.S. Fish and Wildlife Service was petitioned to list the northern goshawk as an endangered species. In addressing this concern, biologists came to realize that little formal research had been done to ascertain the population status of goshawks in the west. In spite of this, only one year later, the Service denied listing the goshawk. This decision, and then another following first one lawsuit and then another, finally spawned an intensive survey effort to assess the status of goshawks throughout mature forests of the west. Although difficult to judge the long-term impacts of continued logging, it was determined for now that populations of goshawks in the west are actually quite stable. A final decision to not list the species was issued during the summer of 1998.

## Northern Harrier - *Circus cyaneus*

A slim, graceful raptor of open areas, the northern harrier is North America’s only representative of a genus of nine species which claim territories on every continent except Antarctica. In spring and summer it is a widespread and common breeder over much of the North American continent from the Arctic Ocean south to North Carolina, Texas and southern California. They are a highly migratory species which winters south to Central America, Cuba and Colombia.

Until recently, the northern harrier was known as the marsh hawk, a somewhat misleading name since it is not confined to marshlands but can be found in almost any open country from cultivated fields and arid grasslands to sagebrush deserts and alpine meadows.

The northern harrier is a long, slender, narrow-winged and long-tailed raptor of medium size. Unlike most hawks, male and female harriers show a marked difference in plumage (sexual dimorphism). The striking adult males are a pale blue-gray above and white below, with jet black wing tips that appear to have been dipped in



Northern Harrier

ink. It is this pale blue color of the male that gives the harrier its specific name, *cyaneus*, which is the Latin word for “blue.” The darker females sport chocolate brown feathers with tawny rust overtones on their backs. Below, their light undersides are heavily streaked with buff and dark brown.

One feature common to them all though is a pure white rump patch that makes the species easily identified when in flight. Also, they are the only diurnal raptor with an owl-like facial disk and large ear openings that give them exceptional ability to hear.

Northern harriers arrive on their breeding grounds in Utah in early April. During courtship, the male performs a complex and spectacular flight display involving a series of successive acrobatic U-shaped dives and climbs made from 60 feet or higher. At the apex of each swoop he sometimes makes a side-slipping or rollover maneuver before tucking in his wings and diving again. Sometimes the female joins in to indulge in mutual soaring, somersaulting and spinning through the air. Despite these intense pair bonding affairs, the northern harrier is one of a few raptors in the world where males can have more than one female at a time as a mate.

Harriers forage on the wing much of the day, cruising at slow speeds, skimming fields and marshes just above the vegetation. They float with wings held high in a shallow “V,” searching and listening for prey. When prey is located, the harrier skillfully hovers in mid-air waiting for a prime moment to strike. Over two-thirds of the northern harrier’s diet consists of small mammals such as mice and voles, making them not only valuable as a unique and interesting species, but as efficient controllers of rodents as well.

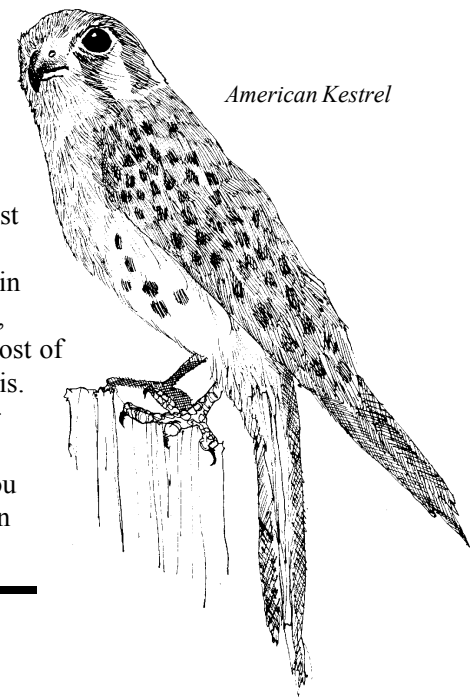
## American Kestrel - *Falco sparvesuis*

Drive down any country road and you’re likely to spot an American kestrel, the smallest, most common and most colorful of all North American falcons. With an estimated population of over one million breeding pairs north of Mexico alone, it is the most readily seen bird of prey on this continent. Kestrels like other falcons have small heads, long wings that taper to a point and streamlined bodies; a build meant for speed. The name falcon comes from the Latin *falx*, meaning “sickle,” and refers to the curved shape of their wings in flight.

This diminutive, three to four ounce, robin-sized falcon is easily distinguished by its beautiful and colorful markings. The bold pattern on its head, a rusty crown bordered in steel-blue and framed by white cheek patches banded with broad vertical black stripes, is certain to catch one’s eye. Males also sport striking blue wings which contrast sharply with rufous colored backs, tails and breast feathers. Females, just slightly less bright, have cinnamon colored wings and buff colored breasts spotted with brown.

American kestrels, are easy to spot not only because they are so brightly colored, but because of their preference for perching atop trees, fence posts, utility poles and telephone wires from where they scope out their prey. They are also famous for their ability to hover in the sky. With wings rapidly beating and fanned tails depressed, they float skillfully aloft before making a quick slanting stoop to capture their kill. Although the kestrel’s species name is *sparversius* for “sparrow,” and formerly they were called sparrow hawks, songbirds are not the kestrels main prey. Instead grasshoppers and mice are their favorite prey. They’re quite versatile though and will eat bats, dragonflies, snakes and frogs as well.

Kestrels are unique in that they are the only North American falcons or hawks that nest in cavities. They use not only natural cavities and woodpecker holes but eaves of buildings and barns, and nest boxes too. Kestrels mate for life and, in Utah, pairs begin courtship in April. No actual nest is constructed and the four to five brown-blotched, whitish eggs are laid directly on the bottom of the chosen cavity. The female does most of the incubation which lasts about 30 days, but the male provides food on a regular basis. After hatching, the young remain in the nest for an additional 30 days, and by another two weeks they are on their own. Kestrel nest boxes can be popular conservation projects for youth but they must be carefully maintained and cleaned each year. If you build one and put it near an open field with plenty of prey, you’re sure to be more than pleasantly rewarded by the wondrous antics of a breeding pair and their young.



American Kestrel

Try some of these **Really Neat Activities** to teach about **Utah's Really Neat Raptors!**

1) **See For Yourself** - Raptors possess great powers of vision. Their eyes have a resolving power (ability to focus on objects at a distance) that can be eight times better than that of people. Place a spool or other small object on the ground. Have students back away from the object until they can no longer see it. This is the limit of their eyes' resolving power. Next, have them measure the distance and multiply it by a factor of eight. This will tell students how far away a raptor could be and still see the object. Now, from the new distance, have students look at the object through a pair of binoculars to get a sense of what it would be like to have raptor eyes!

2) **What is Your Wingspan?** - Utah's raptors range in size from the smallest, the American kestrel with a wingspan of about 20 to 24 inches, to the largest, the golden eagle with a wingspan of about six to eight feet. Have students draw life size silhouettes of raptors in flight on butcher paper by projecting a transparency onto the wall (request copy of silhouettes from Project WILD). Focus the image on the paper on the wall at a size equivalent to the actual size of the raptors. Then have students compare their wingspans by lying down upon their traced silhouette.

3) **Dance of the Raptors** - Many raptors, including bald eagles, northern harriers and red-tailed hawks, engage in elaborate courtship dances with their mates. Have students explore some of the beautiful and acrobatic dances that raptors undertake as they form pairs. Then let students "dance on the wind" like raptors as they mimic and perform the dances themselves. To introduce this activity, read an exquisite poem entitled "When Eagle Speaks" found at <http://www.island.net/~standish/eagle.html>, or request a copy of the poem from Project WILD.

4) **Flying High in the Sky** - The wings of raptors were designed to give them the power to soar on the wind and fly high in the sky. Their wings are shaped with a curved upper surface that allows for "lift," the force that causes something to rise in the air. Have students gain a better understanding of how curved wings create lift by having them hold a thin, four by eight inch piece of paper along the bottom of the shortest edge. Have them hold the paper with their thumbs near their mouth so that the paper is drooping down over their knuckles. Then have them blow across the upper surface of the paper. The "wind" traveling faster over the upper surface of the paper will lift the paper upwards. Explain how air traveling faster over the upper surface of a raptors wing, compared to the air travelling slower below along the flat side of the wing, lessens the air pressure above and allows for lift to occur.

5) **Raptor Symbolism** - Raptors, fierce and majestic birds, have acted as a source of spiritual and artistic interpretation in many cultures and civilizations since the dawn of history. Ancient Egyptians worshipped the god Horus who is depicted in tomb paintings as having the head of a hawk, a Goshawk adorned the helmet of Atilla the Hun, and raptors are featured on the national flags of 15 countries. Have students explore the history of raptors as symbols of power and sources of inspiration for poetry and art. Then have them create their own special product featuring a raptor such as a national emblem, a "seal" on a coat of arms, or a poem. See a similar activity at <http://www.raptor.cvm.umn.edu/raptor/meeen/no14.html> or request a copy from Project WILD for more ideas.

6) **Flight of Fancy** - Have students take a fantasy journey and imagine what it would be like to be an eagle. This activity from *Keepers of the Animals* by Michael J. Caudato and Joseph Bruchac uses a guided imagery story to have students experience what it would be like to soar among the clouds or ride high on a thermal like an eagle. Go to your local library to check out this wonderful book or request a copy of the activity from Project WILD.

7) **Poison for Dinner** - Pesticides are a threat to raptors. Poisoned plants can be eaten by animals such as insects, rodents and reptiles making them sick or weak. These animals, when eaten by a hawk, then poison the hawk a little too. If a hawk eats many of these poisoned prey, pesticide levels build up in the hawk's system. This process where a lot of pesticides concentrate in the body of a top predator is called biomagnification. In raptors it can result in serious problems, such as eggshell thinning, poor parental care, or even death. Explore how pesticides enter food chains and the process of biomagnification by conducting the Project WILD activity, "Deadly Links."

8) **Adopt-a-Hawk** - Conduct a fundraiser to help Hawkwatch International help raptors. Hawkwatch International will also provide excellent classroom presentations on raptors. Call (800) 726-4295 for information.



## *Resources*

## *Soar on Over for These!*

*Call Project WILD at: (801) 538-4719*

### *Raptor Resources*

**Raptor Ecology Activity Guide** - Copy of an excellent teacher's guide to classroom activities for grades 4-8 produced by HawkWatch International.

**"Bald Eagle" and "Osprey"** - Two, four-page wildlife fact sheets from the Utah Division of Wildlife Resource's "Wildlife Notebook Series."

**"Eagles" and "Birds of Prey"** - Two titles in the "Zoobook" series available for \$2.00 each.

**American Kestrel Nest Box Plans** - Excellent handout describing how to build, place, maintain and monitor a nest box for kestrels.

### *Project WILD-Related Resources*

**Wild About Reading** - An annotated bibliography of children's environmental literature for grades K-12, providing suggestions for quality reading materials directly related to the Project WILD activity guide.

**Spanish Project WILD Activity Guide** - This newly produced activity guide contains 34 activities (from both the Project WILD K-12 activity guide and the Aquatic guide) translated into Spanish. Cost is \$10.00 Available only to persons who have previously taken a Project WILD workshop. Request order form.

**National Science Education Content Standards Correlation** - A correlation of the Project WILD K-12 and Aquatic activity guides to the National Science Education Content Standards.

### *For Check-out:*

**Eagles: Masters of the Sky** - New video in our collection from the PBS "Nature" series, featuring eagles from around the world.

**Raptor Resource File** - A wealth of background information, magazine articles, excellent activity guides, videos and more on the raptors of Utah.

**We Care About Eagles** - Slide-tape presentation and activity guide created by the National Wildlife Federation as part of National Wildlife Week, 1982.

### *Fabulous Posters:*

**Steppingstones of Migration** - Large, full-color poster featuring migration of birds and the "steppingstones" of habitat critical to survival of migrating birds on their annual journeys.

**International Migratory Bird Day, 1999** - Beautiful artwork of a variety of migratory birds, including a couple of raptors.

**Water in Motion** - Poster of the winning entry of the 1998 Water Education Poster Contest.

**Utah Prehistory and Heritage Week, 1999** - Layers of living forms existing over time are depicted in this fun and colorful poster.

### *Raptor Internet Sites:*

**American Bald Eagle Information** - <http://www.baldeagleinfo.com/index.html>

**Raptor Center Species Facts Sheets** - <http://www.raptor.cvm.umn.edu/raptor/rfacts/rfacts.html>

**Everything about Raptors Links** - <http://birding.miningco.com/msub1-raptors.htm>

## ***Raptor ID***

## ***What to Look For, Where and When***

**F**ield identification of raptors can be a challenging endeavor. For example, in most species, the male and female look very similar, but the female is usually larger. Some species, have different color “phases”- individuals that are darker (melanistic) or lighter than most of the population. And immature birds, which are almost as large as adults, usually sport different plumages than their elders. Fortunately, to provide some help, birders have devised a useful scheme based on wing shape, size and patterns of flight.

**Buteos** (typical hawks) medium- to large-sized birds that hunt mostly rodents, reptiles and



insects, have broad, rounded wings robust bodies and broad, fanned tails for soaring endlessly on high.

*Swainson's Hawk*  
*Red-tailed Hawk*  
*Ferruginous Hawk,*  
*Rough-legged Hawk*



**Eagles:** very large dark soaring birds with long, flat, broad wings and short broad tails, flight slow steady gliding and soaring.

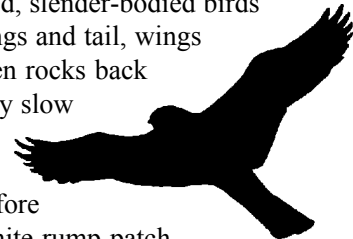
*Golden Eagle*  
*Bald Eagle*

**Accipiters:** small- to medium-sized raptors that maneuver effectively and swiftly through forested areas where they prey on birds and small mammals, have long tails and short, rounded wings that beat rapidly, then glide.



*Northern Goshawk*  
*Cooper's Hawk*  
*Sharp-shinned Hawk*

**Harriers:** hawk sized, slender-bodied birds with long narrow wings and tail, wings form a dihedral, often rocks back and forth in flight, fly slow and low above fields in search of prey, sometimes hover before stooping, distinct white rump patch.



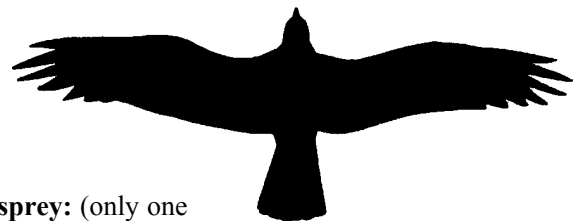
*Northern Harrier*



**Falcons:** speed merchants of the raptors with appropriately streamlined bodies, have long, narrow tapered wings pointed at

the tips, large heads and long tails for diving and stooping at great speeds, wingbeats continuous throughout flight.

*Peregrine Falcon*  
*Prairie Falcon*  
*Gyr Falcon*  
*American Kestrel*  
*Merlin*



**Osprey:** (only one species), medium- to large-sized, exclusively fish eating bird that lives near water, long, narrow wings held in crooked “M” create a gull-like appearance, alternating dark and light plumage, wingbeat is stiff and labored, sometimes hovers high above the water’s surface before plunging feet first to capture fish.

*Osprey*

### **Excellent Field Guides for Raptor Identification:**

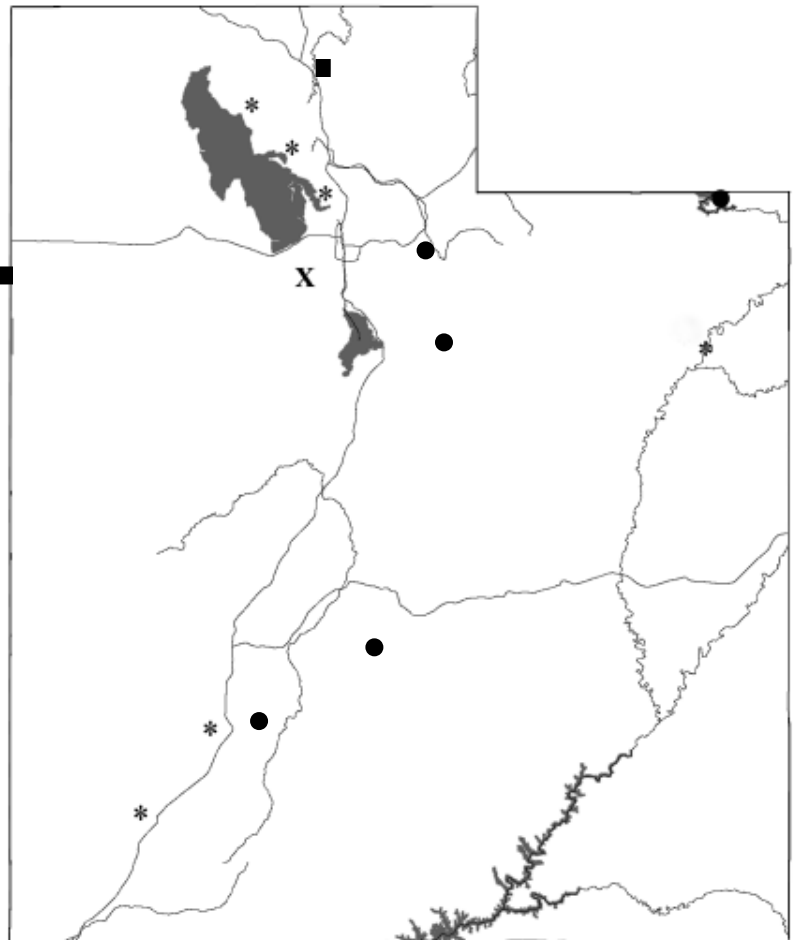
Hawks in Flight, Pete Dunne, David Sibley and Clay Sutton, Houghton Mifflin Co., Boston. 1988.

Hawks, William S. Clark and Brian Wheeler, Peterson Field Guides, Houghton Mifflin Co., Boston. 1987.

## ***Where and When to View Raptors:***

Utah, although primarily a desert, is comprised of an amazing and beautiful patchwork of myriad ecosystems created by variations in topography, climate and human actions that provide abundant habitat for raptors. Because of this wonderful diversity, there are numerous areas throughout the state where raptors can be viewed. Fall and spring periods of raptor migration offer the greatest viewing opportunities, however, many permanent raptor residents can be seen throughout the year. Below are just a few ideas of when and where in Utah to view these magnificent birds.

- In the fall, raptors migrating south tend to skirt the Great Salt Lake and concentrate along the steeply rising Wellsville Mountains. The Deep Creek or Stewart Pass trailheads accessible from the Cache Valley offer strenuous but worthy paths to a HawkWatch International raptor monitoring site where in September and October, migrating raptors can often be seen at or below eye level. Migrating raptors also fly west of the Great Salt Lake and there is another HawkWatch monitoring site in the Deep Creek Mountains near the Utah/Nevada border.
- Flaming Gorge Reservoir currently hosts Utah's largest concentration of breeding ospreys. Here, clear water allows the ospreys to see and catch their prey and the rocky pinnacles lining the shore provide excellent nesting sites. Breeding pairs have also been reported at Fish Lake, Panguitch Lake, Strawberry Reservoir and in the town of Henefer on the Weber River. Nesting platforms for osprey have also been erected at Rockport State Park. View osprey during the summer at these sites.
- X One of the best areas for viewing raptors of a variety of species in the Great Basin at any time of the year is the "Raptor Loop." Wide open valleys with numerous perching posts and poles, and an abundance prey provide excellent habitat for raptors such as red-tailed hawks, ferruginous hawks, American kestrels, prairie falcons, peregrine falcons and golden eagles. The route starts at exit 99 of I-80, heads south on Highway 36 through the Tooele/Rush Valley and loops to the east along Highway 73 towards Lehi. An option offering more viewing opportunities is to continue south on Highway 68 along the east side of Utah Lake and back up around on Highway 6 to I-15 near Santaquin.
- \* Wintering bald eagles can be seen roosting in dead cottonwoods in the marshes along the south and eastern margins of the Great Salt Lake. Good viewing sites in this area include Farmington Bay Wildlife Management Area, Willard Bay State Park and the Bear River Migratory Bird Refuge. Other areas of the state to view wintering bald eagles include Ouray National Wildlife Refuge in the Uinta Basin, Minersville State Park near Beaver and Enterprise Reservoir near Cedar City. Consider joining in on Bald Eagle Day hosted by the Division of Wildlife Resources each February.



## **Guides to Raptor Viewing Locations:**

Birding Utah, D. E. McIvor, Falcon Press Publishing, Inc., Helena, MT. 1998.

Utah Wildlife Viewing Guide, Jim Cole, Falcon Press Publishing, Inc., Helena, MT. 1990.



## Issue Investigation

### Raptors and People: A Stormy Past and Lessons Learned!

It is an undisputed fact that many populations of raptors around the world have suffered significantly at the hands of man over time. Destruction of habitat, indiscriminate killing, accidental poisoning and undue disturbance have all taken their toll. But many lessons have been learned as well, and people have begun to recognize the consequences of their actions. The story of the bald eagle is a good example.

In 1782 when the Continental Congress of the United States chose the bald eagle as its national symbol, bald eagles were numerous throughout America. The naming of many places after eagles by early settlers indicated their relative abundance. As time progressed though, and the continent became more populated, eagle numbers drastically declined. Large areas of land and water were modified, destroying habitat; eagles, unjustifiably blamed for livestock losses, were shot, poisoned and trapped; and water bodies were polluted and over fished, reducing the bald eagles' food supply.

By 1940, concern over the potential extinction of our national symbol led to the passage of the Bald Eagle Protection Act which made it illegal to possess, kill or disturb an eagle or nest without a special permit. This act, along with increased public awareness, started the species on its way back.

Also by 1940, however, the widespread use of insecticides, including DDT and other organochlorine compounds had begun. As bald eagles fed on poisoned prey such as fish, high levels of these toxins built up in their bodies. The accumulation of DDT caused bald eagles to produce eggs with extremely thin shells that were easily broken in the nests. By 1963, only 417 active bald eagle nests remained in the continental United States.

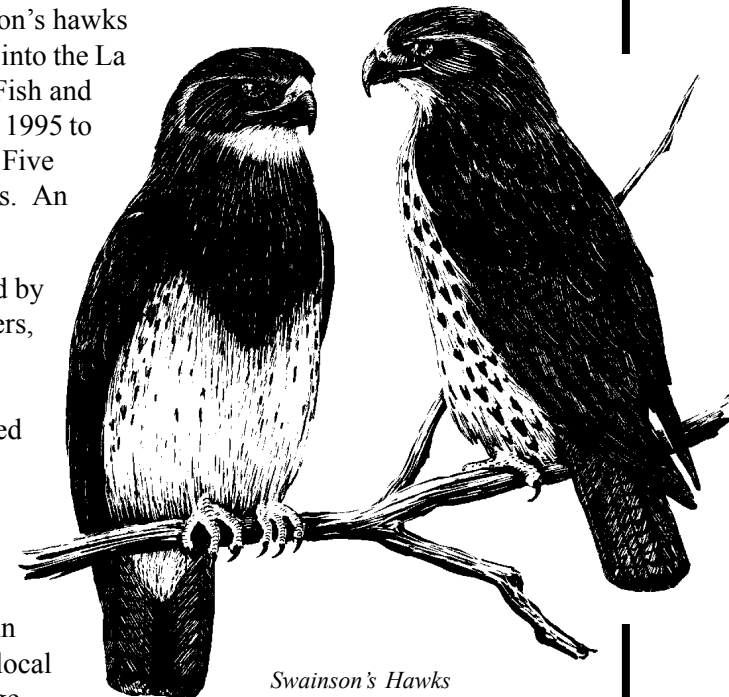
Response to this decline resulted in the bald eagle being listed as endangered under the Endangered Species Preservation Act of 1966. Of more importance to the bald eagle's recovery though was the ban on the use of DDT in the United States in 1972. Further protection granted via its listing under the Endangered Species Act in 1978 also helped bald eagle populations rebound. In 1994, the U.S. Fish and Wildlife Service reported 4,452 breeding pairs in the lower 48 and in 1995 its federal status was downgraded to Threatened. Today, proposals are in place to remove the bald eagle from the Endangered Species List. Despite this incredible recovery, continued loss of habitat, disturbance of nests, accidental poisoning and illegal shooting still threaten their survival.

The impacts pesticides such as DDT were not exclusive to bald eagles. Peregrine falcons and osprey also suffered greatly from DDT. Through intensive recovery efforts, especially in the case of the peregrine falcon, populations of both these species have been restored. Although use of DDT was banned in the United States in 1972, it is still legally produced in the United States and other countries and is used by countries in the southern hemisphere where it continues to pose a threat to birds that migrate to these areas.

Another story is that of the Swainson's hawk, large, handsome chestnut-brown colored buteos with white belly and chin feathers that inhabit grasslands across North America where they consume mostly insects, particularly grasshoppers. Known as the champion of migratory hawks, biologists had long known that Swainson's hawks undertook long-distance migrations to South America during the winter traveling as much as 14,000 miles round trip but they were not exactly sure where the birds ended up.



Bald Eagle



Swainson's Hawks

Swainson's hawks seemed to be faring relatively well in their northern haunts despite widespread development of western grasslands. Unlike many other raptors such as ferruginous hawks, which are especially sensitive to disturbances by humans, Swainson's hawks seemed to tolerate people fairly well. When biologists began to notice declines in populations of Swainson's it was agreed that locating their wintering grounds would provide needed information to halt such trends. In 1995, an intensive tracking effort involving trapping of hawks and fitting them with backpack radio transmitters was begun in Colorado by the U.S. Fish and Wildlife Service.

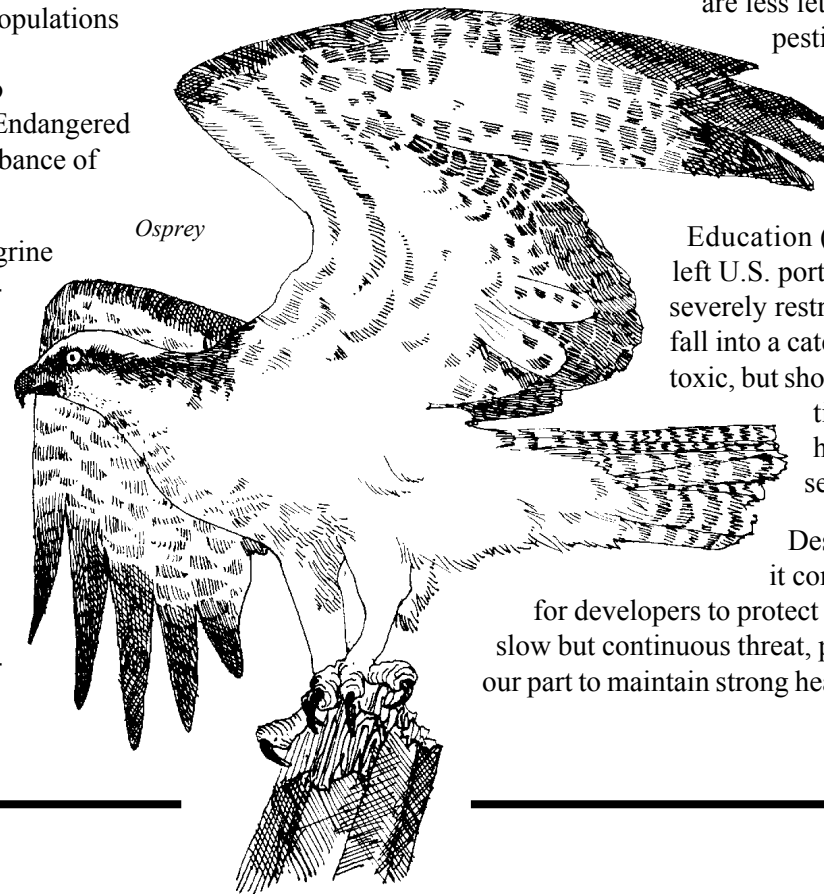
Satellite data from the study showed that most of the Swainson's hawks nesting in North America, an estimated 900,000 birds, funnel into the La Pampa province west of Buenos Aires in Argentina. When Fish and Wildlife Service biologists traveled to the La Pampa region in 1995 to confirm their data, they were met with a gruesome surprise. Five thousand hawks were found dead from ingestion of pesticides. An estimate for total kill ranged from 20,000 to 40,000 birds.

It was discovered that a pesticide called monocrotophos, used by farmers growing sunflowers in the area to control grasshoppers, was the culprit. This pesticide was used heavily, sometimes being sprayed by airplanes, but more often by trucks. Swainson's hawks following the trucks to gather insects turned up by the vehicles got sprayed directly in the process. The chemical was so lethal that dead hawks were found standing upright in fields that had just been sprayed, propped up by their partly spread wings.

Fortunately, the discovery of the pesticide poisoning resulted in a cooperative effort between the North American biologists, local Argentine farmers and the government of Argentina to change agricultural practices and help farmers learn to use pesticides that are less lethal to non-target species like the hawks. The principal manufacturer of the pesticides, a major U.S. company also agreed to withdraw the pesticide from the Pampas market and trade or buy back existing stocks.

Somewhat troubling about this whole affair is the fact that this particular pesticide is one of many banned for use in the United States, but legally exported. Research by the Foundation for Advancements in Science and Education (FASE) reported in 1995 that at least 344 million pounds of hazardous pesticides left U.S. ports from 1992 through 1994. Included were chemicals that have been banned or severely restricted by the U.S. Environmental Protection Agency. Many of these chemicals fall into a category of chemicals known as organophosphate and carbamate pesticides, highly toxic, but short-lived chemicals generally considered to be nonpersistent and nonbioaccumulative in contrast to DDT. Knowledge gained from the incident with Swainson's hawks in Argentina has led biologists to become more aware and take more seriously the impacts of environmental contaminants on birds of all species.

Despite the knowledge gained from our past mistakes we still need to be wary when it comes to conservation of species. Although there are laws and detailed guidelines for developers to protect raptors in place, populations are still vulnerable to declines. Loss of habitat, a slow but continuous threat, poses the greatest danger to raptors nationwide. It will certainly take diligence on our part to maintain strong healthy populations of these magnificent birds.



Osprey



# Project WILD



*Utah Division of Wildlife Resources*  
*1594 West North Temple, Suite 2110*  
*PO Box 146301*  
*Salt Lake City, Utah 84114-6301*

Bulk Rate  
U.S.  
POSTAGE  
PAID  
Permit No. 4621  
Salt Lake City  
Utah

*Growing WILD* is written by Diana Vos and Audrey Walker. Edited by Vicki Unander. Illustrators: Clark Bronson, Alan Nielsen, Shelee Jorgensen, Cindy Bruner, plus additional clip-art selections. Artwork may not be reprinted.



The Utah Department of Natural Resources receives federal aid and prohibits discrimination on the basis of race, color, sex, age, national origin, or disability. For information or complaints regarding discrimination, contact Executive Director, PO Box 145610, Salt Lake City, UT 84114-5610 or Office of Equal Opportunity, US Department of the Interior, Washington, DC 20240. The Division of Wildlife Resources is funded by the sale of hunting and fishing licenses and through federal aid made possible by an excise tax on the sale of firearms and other hunting and fishing-related equipment.



TAKE Pride IN  
**UTAH**



Printed on recycled  
paper using vegetable  
oil ink.

## *Naturescaping Grants*

*Win a \$300 student action  
grant from Project WILD for  
the 1999-2000 school year!*

### **What is a Naturescaping Grant?**

It is money for students to conduct an action project to establish wildlife habitat on or near their school grounds. Providing habitat for wildlife is of increasing importance. Naturescaping projects allow students to take positive actions which will result in long-term benefits for wildlife.

Request an application and more details from Project WILD at (801) 538-4719. Complete and return application no later than **November 30, 1999.**